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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,637	09/27/2001	Gary A. Brist	219.40432X00	9725

7590 07/15/2004

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EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/963,637	BRIST ET AL.	
	Examiner	Art Unit	
	Sung H. Pak	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,21-26,28,30,32 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19,21-26,28,30,32 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's amendment filed 4/22/2004 has been entered, and all pending claims have been carefully reconsidered in view of the amendment. Claims 27, 29, 31, 33 are cancelled by this amendment, thus claims 1-19, 21-26, 28, 30, 32, 34 are now pending.

In light of the amended limitations and the remarks set forth in the amendment, the previous ground of rejection is withdrawn. However, upon further consideration a new ground of rejection is set forth based on a newly found prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8, 17-19, 21-26, 28, 30, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wojnarowski et al (US 5,562,838) in view of Hornbeck et al (US 6,387,284).

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Wojnarowski et al was cited in the previous office action.

As discussed in the previous office action, Wojnarowski discloses an optical device and a method of forming the optical device comprising: forming a trench in a substrate (Fig. 19A); providing at least one metalized surface along the trench (Fig. 19B, column 11 lines 32-33); activating a bonding material, such as adhesive ("248", column 12 lines 18-19); having a metalized capping surface (246, column 12 lines 16-17) to bond the bonding material to the substrate such that the metalized capping surface is located over the trench having at least one metalized surface (Fig. 19C); wherein the substrate comprises a printed circuit board (column 3 lines 12-29); wherein the substrate comprises a dielectric material (column 10 lines 17-18); wherein the trench is formed by selectively removing portions of the dielectric material (column 11 lines 65-67); wherein at least one metalized surface comprises sidewall surfaces and a bottom surface of a waveguide structure (Fig. 19B); wherein the metalized capping surface on the bonding material is formed by providing the bonding material and selectively placing the metalized capping surface on the bonding material (column 12 lines 13-19); filling the trench with a material (Fig. 17A-17B); wherein the bonding material is formed on top of the trench as a top surface ("248" Fig. 19C).

However, Wojnarowski does not explicitly teach that the metallized capping surface is located only over the trench.

Hornbeck teaches the use of metallized capping surface that is selectively removed such that it is located only over the trench of the waveguide (Figs. 8-10, column 8 lines 32-60, column 9 lines 12-18). Having a metallized capping surface only over the trench of a waveguide is

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considered advantageous and desirable because this allows for a complete and more effective enclosure of waveguiding core having and thus results in low loss of transmitted optical signals.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device in Wojnarowski to have a metallized capping surface that is selectively removed such that it is located only over the trench of the waveguide.

Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (US 6,539,157 B2) in view of Hornbeck et al (US 6,387,284).

Doi was cited in the previous office action.

As discussed in the previous office action, Doi discloses an optical device and a method of forming the optical device comprising: forming a trench in a printed circuit board substrate (abstract); the trench having a first side surface, a second side surface and a bottom surface (Fig.1); forming at least one surface on the first side surface, the second side surface and the bottom surface of the trench (column 4 lines 16-25); forming a capping surface ("30") on a bonding material (column 5 lines 52-60); forming the bonding material as a top surface over the trench having at least one surface, the top surface being different than said at least one surface (column 5 lines 41-51); wherein said at least one surface comprises at least one metalized surface and said top surface comprises a separate top metalized surface, wherein the capping surface is a metalized capping surface (column 5 lines 31-60); wherein the substrate comprises a dielectric material (column 2 lines 32-49); therein the trench is formed by selectively removing portions of the printed circuit board substrate (column 4 lines 40-57); wherein the metalized capping surface

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on the bonding material is formed by applying a metal coating on the bonding material and selectively removing portions of the metal coating such that the metallized capping surface remains on the bonding material (column 5 lines 47-51).

However, Doi does not explicitly state that the metallized capping surface is located only over the trench.

Hornbeck teaches the use of metallized capping surface that is selectively removed such that it is located only over the trench of the waveguide (Figs. 8-10, column 8 lines 32-60, column 9 lines 12-18). Having a metallized capping surface only over the trench of a waveguide is considered advantageous and desirable because this allows for a complete and more effective enclosure of waveguiding core having and thus results in low loss of transmitted optical signals.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device in Doi to have a metallized capping surface that is selectively removed such that it is located only over the trench of the waveguide.

Response to Arguments

Starting on page 9 of the applicant's Remarks, it is argued that Wojnarowski does not teach placing the capping material only over the trench area as recited in the amended claims.

However, the examiner respectfully points out that a step of placing a metallized capping material only over the trench area is not a patentable feature as discussed in this office action.

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Prior art, such as Hornbeck et al (US 6,387,284) discloses this feature, and the recited claims are rendered obvious as discussed above.

Also, it is argued that Doi shows portions of the cover that does not cover the trench, and that therefore Doi does not disclose a capping material that is located substantially only over the trench area.

The examiner respectfully points out that although Doi shows holes in the cover area that allow the passage of light, these holes take up very small portion of the cover (column 5 lines 40-47), and that the waveguiding core is indeed *substantially* covered. If the waveguiding core were not substantially covered, and that the holes were prominently distributed on the cover, the waveguiding portion 20 would not be able to guide light waves, contrary to the teachings of Doi. Therefore, the recited limitations of the instant application is disclosed by Doi as discussed in this office action.

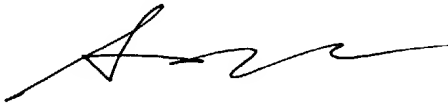
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak
Examiner
Art Unit 2874

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